

ABSTRACT

A first aspect of the invention relates to a method of determining whether a sequence of a first portion of a polynucleotide of a first organism and a
5 sequence of a first portion of a polynucleotide of a second organism comprise a mismatch. The method may comprise preparing a plurality of duplexes, which may comprise either or both of (i) a first polynucleotide strand having a sequence corresponding to a sequence of a first portion of genomic DNA of a first organism and (ii) a first complementary polynucleotide strand having a sequence corresponding
10 to a sequence of a first portion of genomic DNA of a second organism.

The duplexes may be subjected to temperature gradient electrophoresis (TGE) to obtain first electrophoresis data indicative of the presence of a mismatch between (a) the sequence of the first portion of the genomic DNA of the first
organism and (b) the sequence of the complementary portion of the genomic DNA of
15 the second organism.